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# Managing Business Requirements: Implementing Best Practices to Reduce Risk, Rework and Recreminations

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# Top 5 IT Disasters of All Time



The  
Business  
Context:  
Part I

A faulty Soviet early warning system nearly caused World War III. In 1983, *a software bug* in the Soviet system reported that the U.S. launched five ballistic missiles.

The AT&T network collapsed in 1990, caused by an *error in a single line of code* in a software upgrade. Some 75 million phone calls across the U.S. went unanswered.

An Ariane 5 rocket exploded shortly after liftoff in 1996. According to a New York Times Magazine article, the self-destruction was triggered by *software trying to stuff "a 64-bit number into a 16-bit space."*

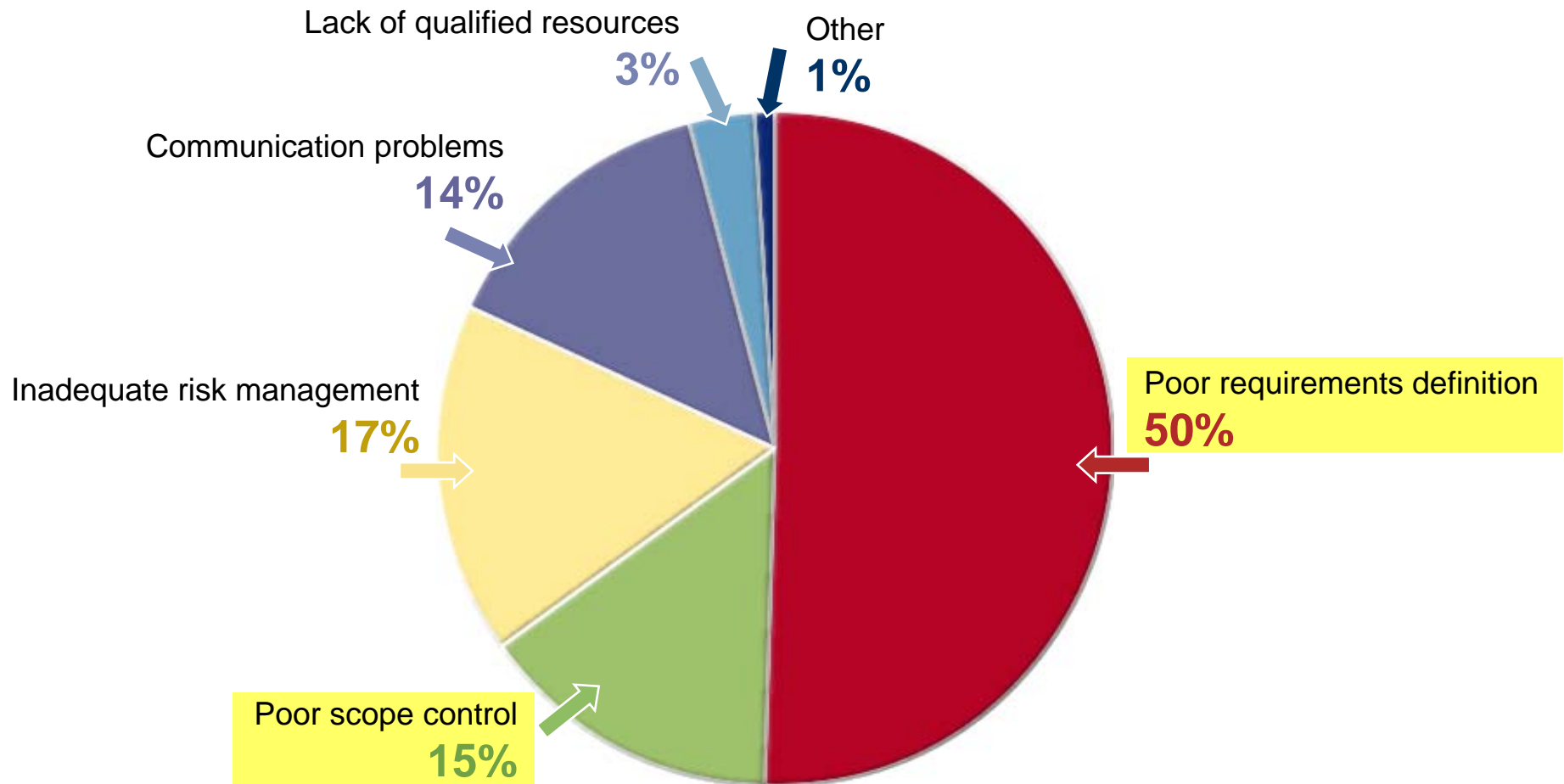
Two partners used different and *incompatible versions of the same software* to design and assemble the Airbus A380 jetliner in 2006. When Airbus tried to bring together two halves of the aircraft, the wiring in one did not match the wiring in the other. That caused at least a one-year and very costly delay to the project.

Navigation errors doomed two spacecraft sent to explore Mars in 1998 when one NASA contractor used *imperial units and another contractor employed metric units* in the space crafts navigation systems.

# Today's agenda

- ✓ **Risk Management Primer**
- ✓ **The role of the business analyst**
  - ✓ **Key best practices**
    - ✓ **Q&A**

# Key reasons for project failure



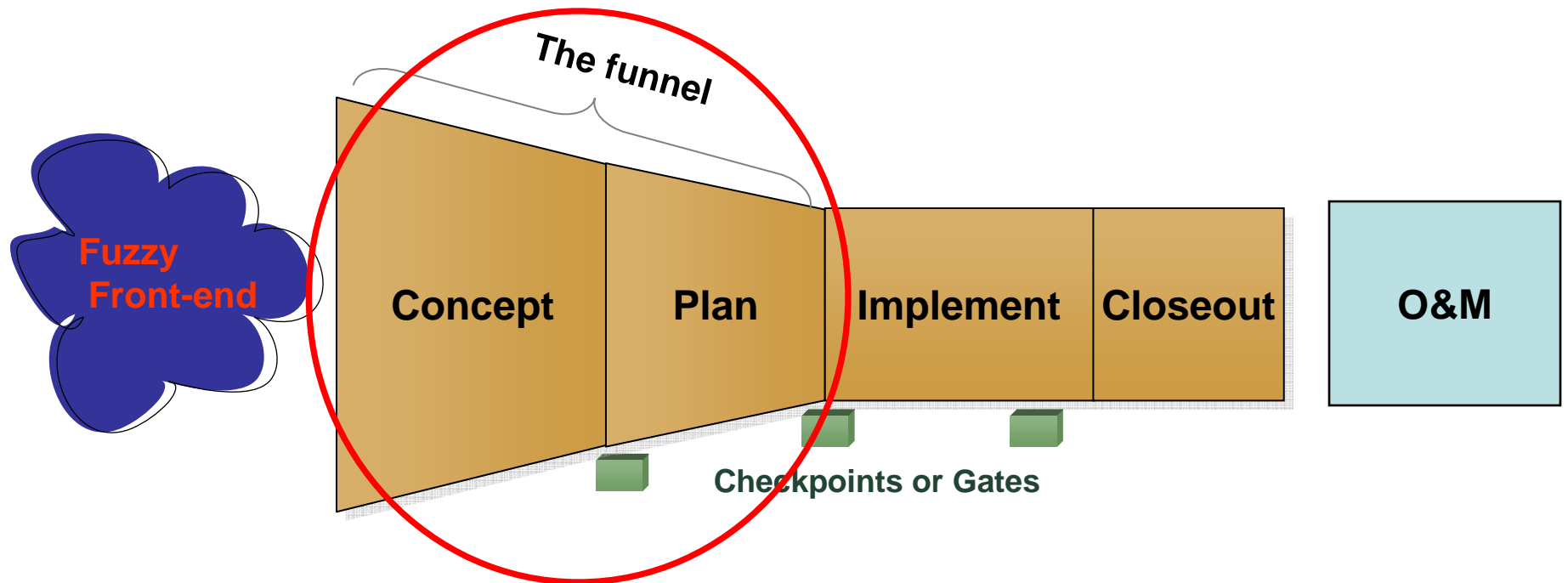
Source: ESI International survey of 2,000 industry professionals, 2005.

## Some statistics...

**\*Poor requirements account for 71% of project failures ~ CIO Magazine.**

**\*Rework accounts for 40% of effort in software development projects ~ The Butlor Group – April 2005.**

# Nominal Project Life Cycle



# Getting a Handle on Risk

## Components of Risk

Risk Event

Probability

Impact

*There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction. ~ John F. Kennedy (1917 - 1963)*

What if...

**Dealing with risk is all about asking the right “What If” questions, and developing good responses to the ones that are really scary!**



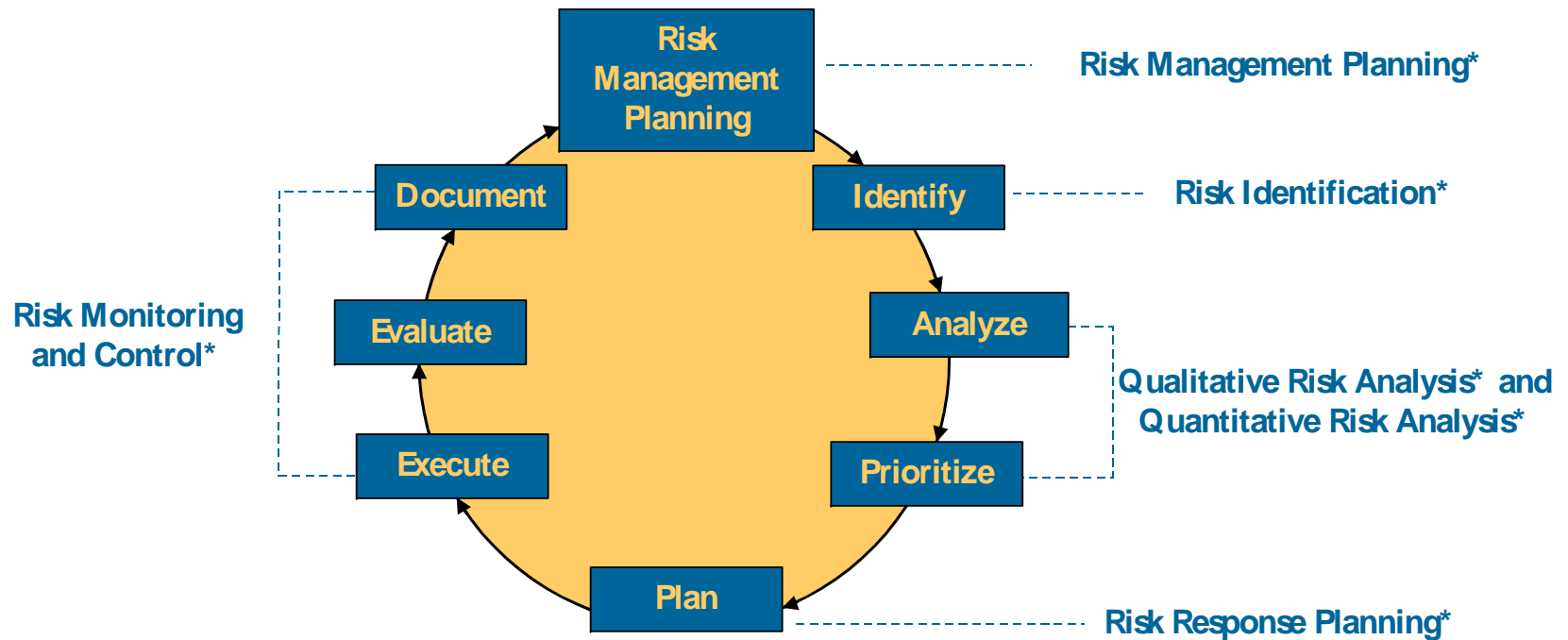
# It's what's up front that counts!!!

## **Poor up front work introduces risk of failure**

- What if the requirements are unclear?
- What if the work is under-estimated?
- What if we can't test the requirement?
- What if the project team doesn't understand the requirements?

# RISK MANAGEMENT

## ESI's Risk Management Model



\* PMI® Project Risk Management Processes

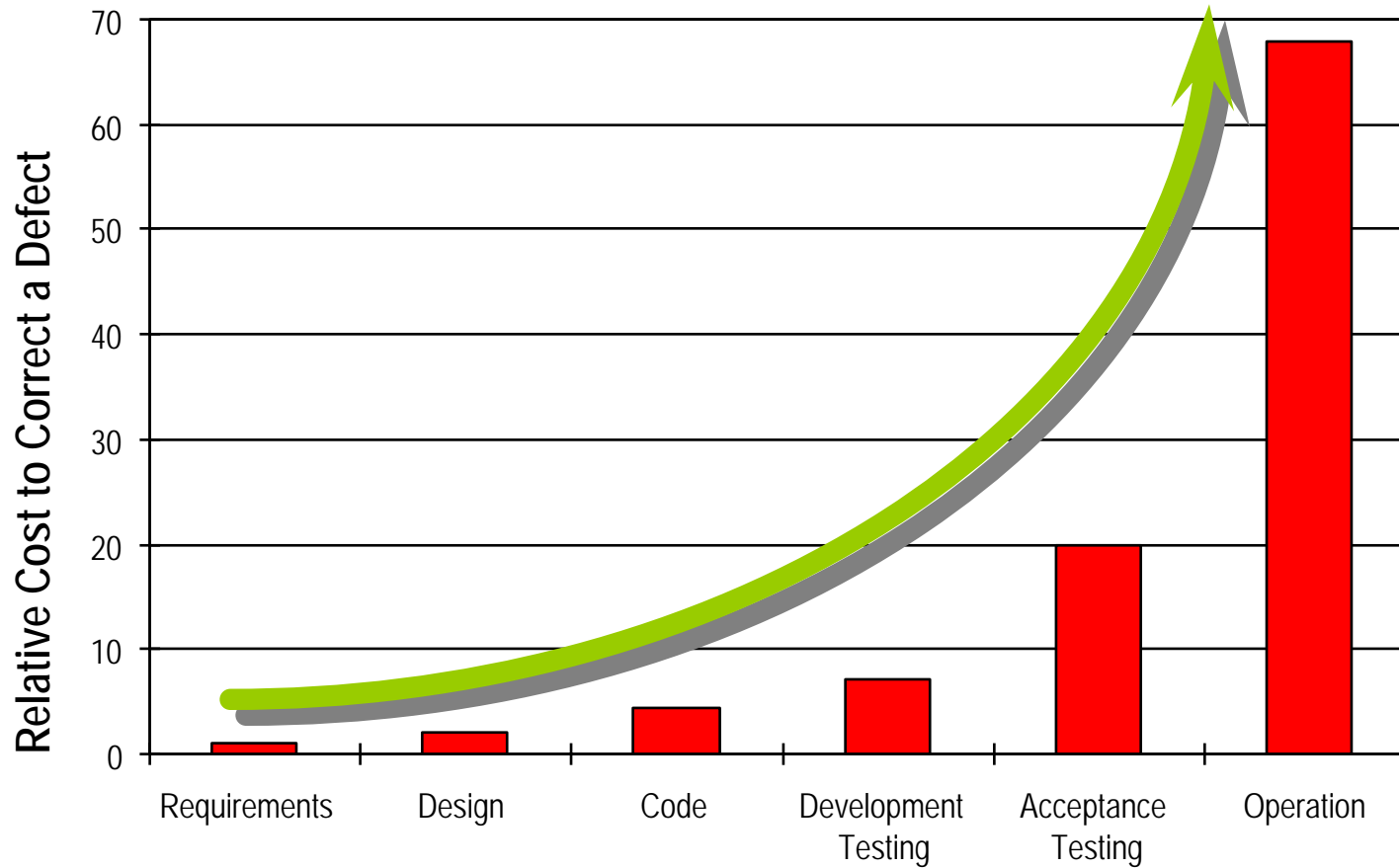
# What can you do about a risk?

- ✓ **Accept**
- ✓ **Mitigate**
- ✓ **Transfer**
- ✓ **Eliminate**

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Now that we are  
risk aware, next skill  
set – analysis

# The “Impact” of BAD Requirements



Source: Boehm, Barry W. *Software Engineering Economics*. Englewood Cliffs, NJ: Prentice-Hall, 1981

# Where IS the Missing Link?

## Three Functions / Roles within the context of a “project”

- Business Analysis
- Project Management
- IT Development

# Business Analyst: Defined

Works as a liaison among stakeholders to **elicit, analyze, communicate** and **validate** requirements for changes to business processes, policies, and information and information systems

Understands **business problems and opportunities** in the context of the requirements and recommends solutions that enable the **organization to achieve its goals**

International Institute of Business Analysis, *Business Analysis Body of Knowledge*, Release 1.6.

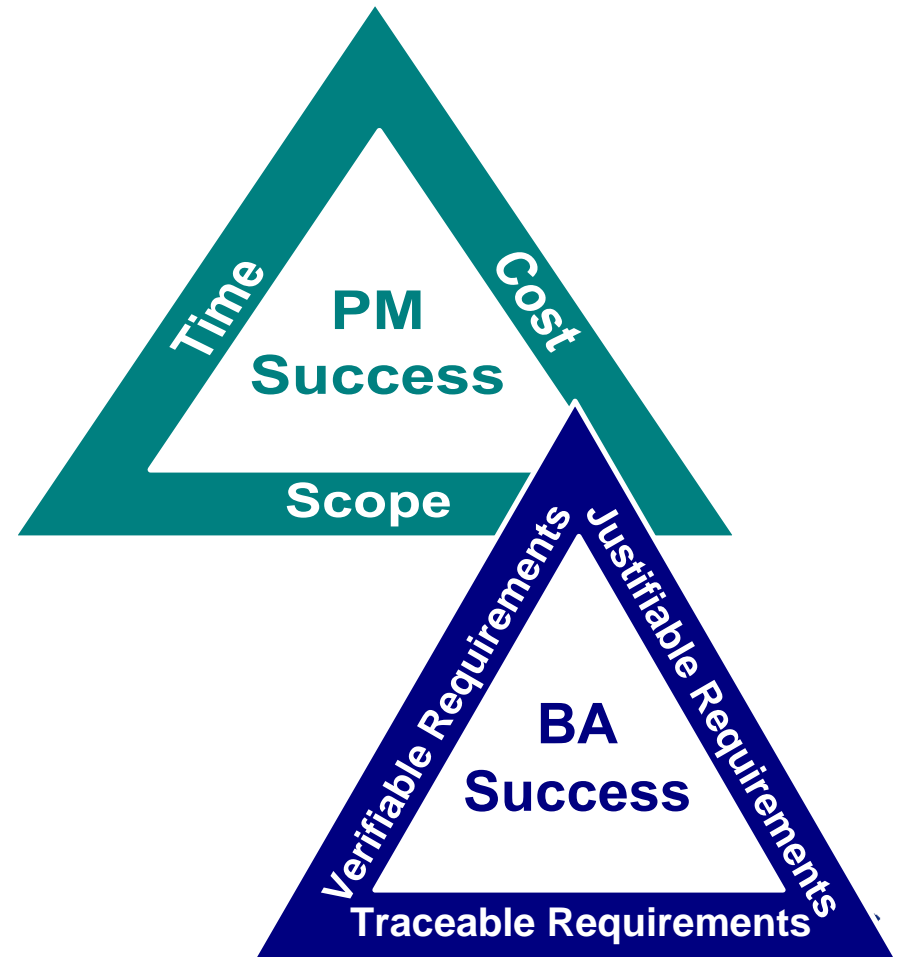
# Measures of Success

**All projects are concerned with the creation of deliverables**

**All requirements must be tied to one or more deliverables**

**All deliverables must be tied to the overall scope of the project**

***If all the deliverables have the characteristics depicted in the adjacent graphic, you have achieved BA success thus adding to project success!***





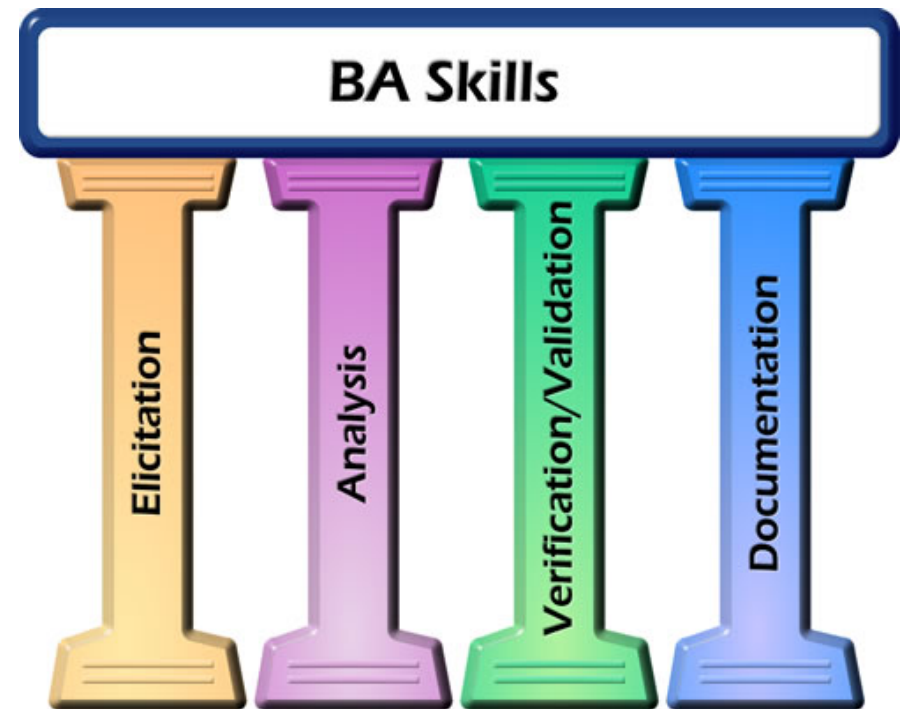
# Fundamental BA Skills

## The Definition

Works as a liaison among stakeholders to elicit, analyze, communicate and validate requirements for changes to business processes, policies, and information and information systems

Understands business problems and opportunities in the context of the requirements and recommends solutions that enable the organization to achieve its goals

*“BA Body of Knowledge v1.6, IIBA - 2006*



# BEST PRACTICES

## **1) COLLABORATION:**

Business Analysts and Project Managers Working Together

## **2) REPEATABLE PROCESSES**

Standardized Business Requirements Document (BRD)

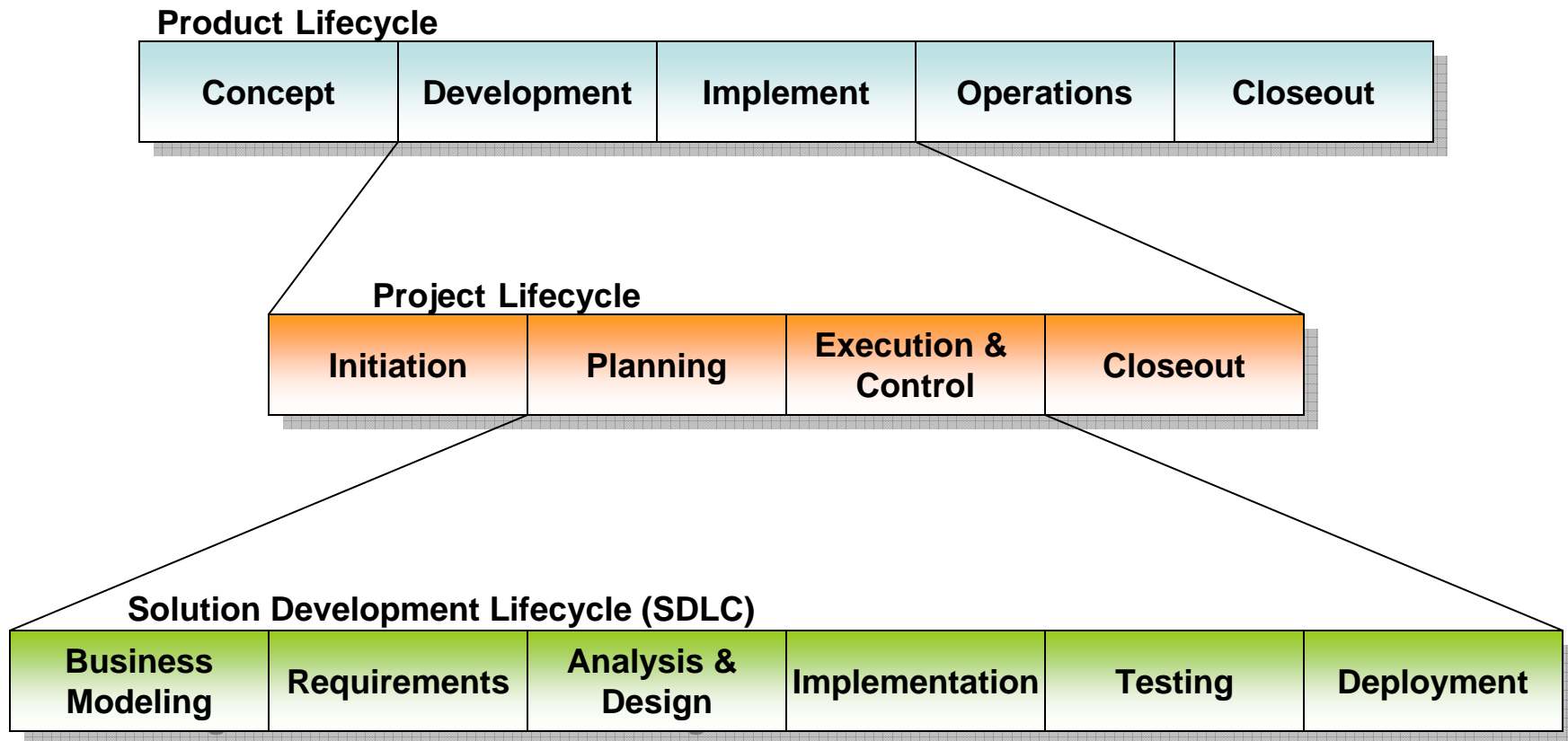
## **3) EFFECTIVE COMMUNICATION**

Removing Ambiguity in the Documentation

## **4) QUALITY ASSURANCE**

Conducting Effective Peer Reviews

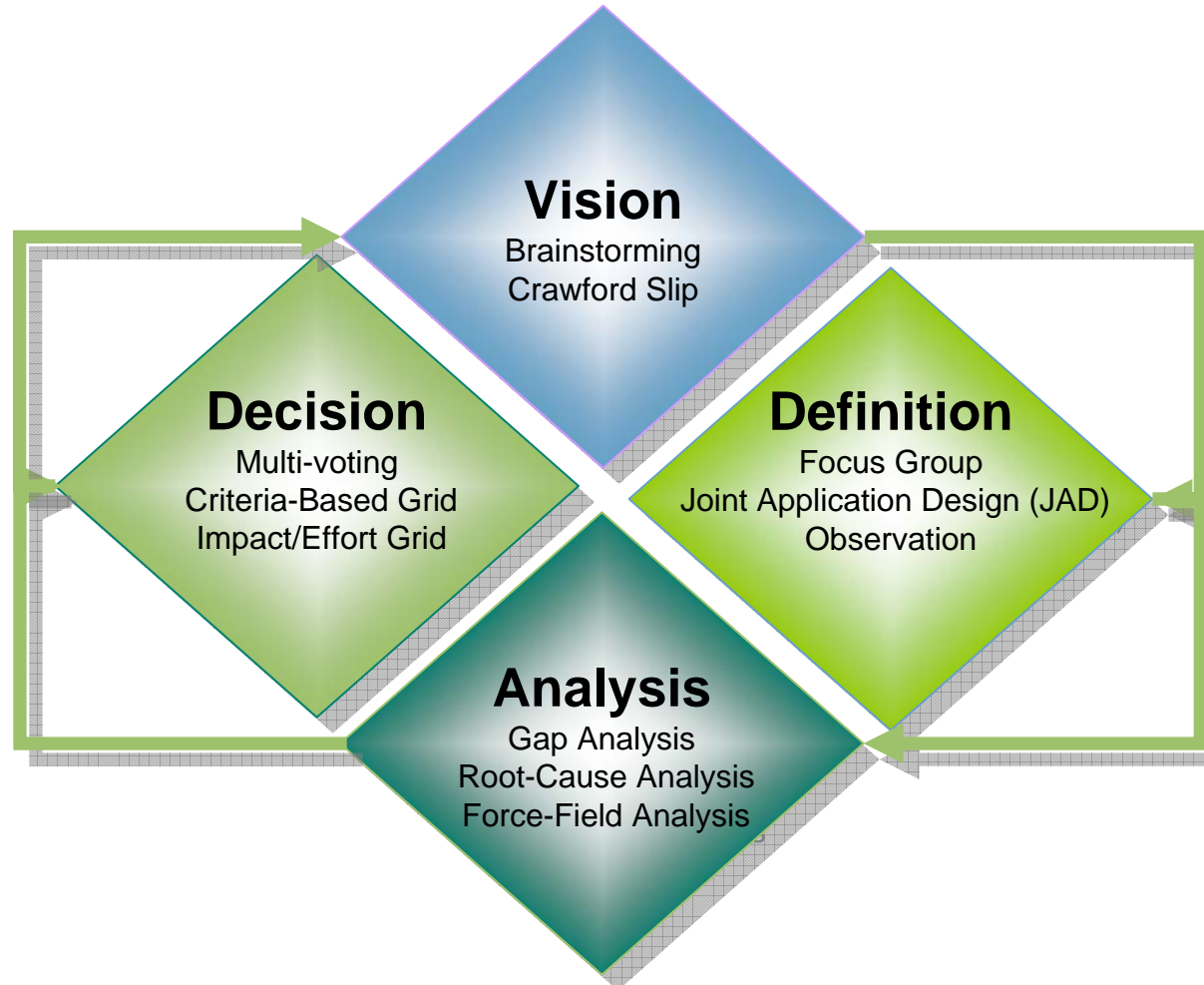
# 1. Collaboration – A Standardized Approach



# Elicitation and Validation Techniques

	<b>Observation</b>
	<b>Interviews</b>
	<b>Focus Groups</b>
	<b>Brainstorming Sessions</b>
	<b>Joint Application Design</b>
	<b>Questionnaires</b>
	<b>Prototyping</b>

# A Guide to When to Use a Given Technique



# What Is the Requirements Work Plan?

**Created and used by business analysts to plan their requirements gathering and documentation activities**

**Akin to mini project plans and schedules but focuses solely on the Business Analysis phase of a project**

**Must be approved by client acceptor before actual business analysis work proceeds**

- Rolled up by the project manager as a component of the overall project plan and schedule

# Why Do This?

## Planning helps ensure that—

- The appropriate requirements are analyzed
- Appropriate analysis methods are selected and prepared
- The stakeholders are available for participation
- The approval process can be scheduled

## Planning your work before you do it aids in—

- Scoping and timing your work
- Work status checking and reporting
- Ensuring you don't forget anything

# Visibility and Negotiation

**The Requirements Work Plan can be an important negotiation tool with the project manager and the project sponsor**

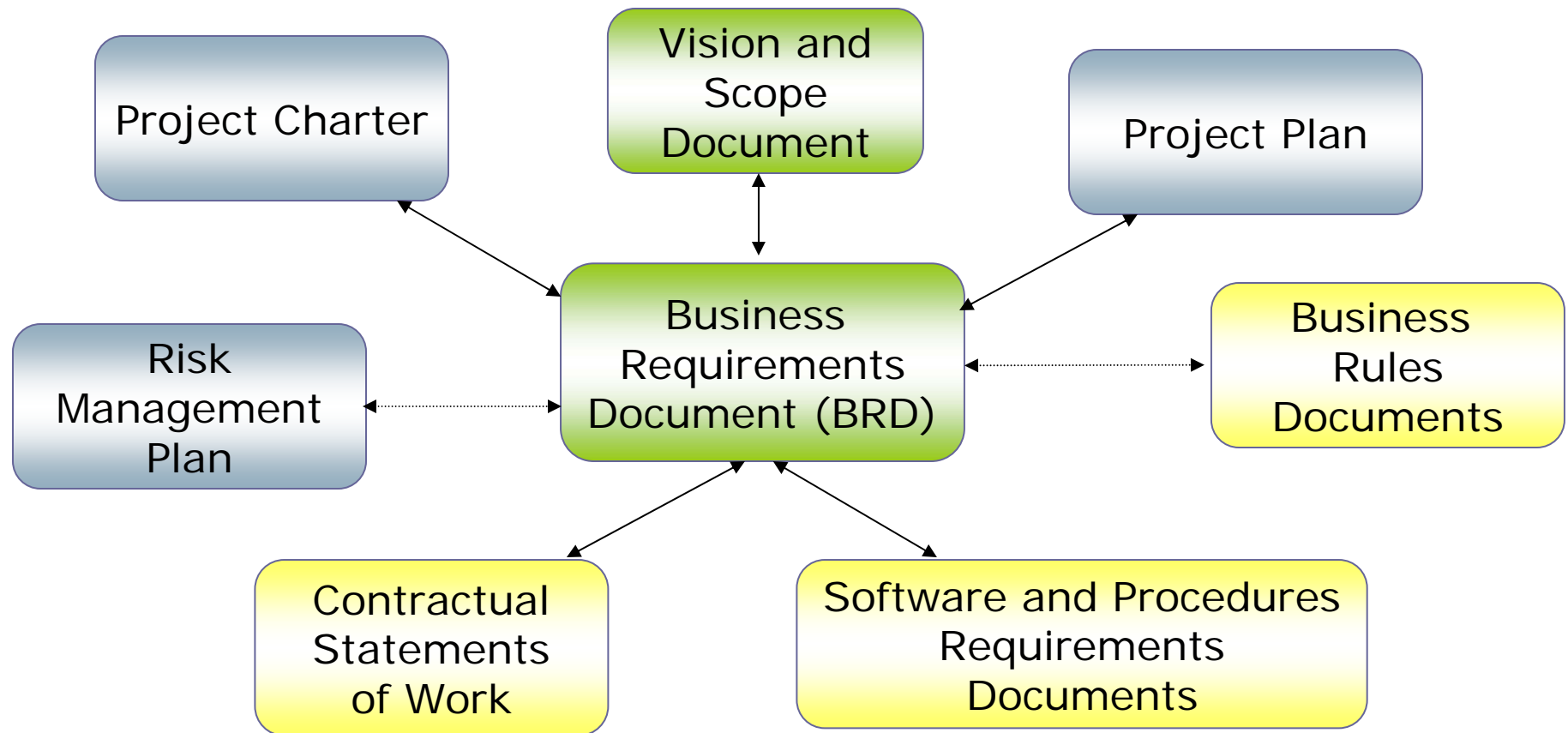
- Makes visible and measurable the reality and complexity of the work
- Exposes the risk of prematurely establishing time and budgetary allotment, or unilaterally reducing it to fit according to some predefined formula



# Sample Requirements Work Plan Sections

- 1. Activity Objective**
- 2. Overview**
- 3. Deliverables**
- 4. Scope Clarification**
- 5. Project Stakeholders**
- 6. RWP Resources Plan**
- 7. User Profiles**
- 8. Analysis Phase Team Structure**
- 9. Assumptions, Dependencies and Constraints**
- 10. Risk Management Plan**
- 11. Work Breakdown Structure: Analysis Phase**
- 12. Approval Section**

## 2. Repeatable Processes – Sharing “Standardized” Documents



## 2. Repeatable Processes : Business Requirements Document (BRD)

**Business  
Requirements  
Document**

## 2. Repeatable Processes : Business Requirements Document (BRD)

BRDs must be;

- **Correct**
  - All needs of the stakeholders, and only those needs, are clearly and accurately documented
  - The BRD must be consistent with the Vision and Scope Document
- **Consistent**
  - Internal consistency: No inconsistencies within the document
  - External consistency: No incompatibility with requirements of existing systems
- **Feasible**
  - Achieving requirements is possible within the expected budget and schedule
- **Validatable**
  - There is a method of proving that each requirement has been met
  - If the proof is not understood, the requirement is poorly written
  - The best proof is testing, but other proofs may be acceptable

## 2. Repeatable Processes: Additional standards

**Having a common methodology or approach will reduce rework**

**Having a common toolkit of standardized items will improve communications and reduce the risk of misinterpretation**

**Information Technology Infrastructure Library (ITIL) -- [www.itil.org](http://www.itil.org)**

# Integrating the Requirements Work Plan with the Project Plan

- Should be built using whatever software tools the project manager is using to build the overall project plan
- Assists in information sharing and consolidation across the project team

### 3. Effective Communication: Removing Ambiguity

**Removing ambiguity can be done by:**

**Taking the time to gather requirements upfront**

**Writing the requirements in a format which allows it to be proven (Can it be validated / tested)**

**Combining text with pictures (i.e. modeling)**

**Documenting each requirement in a matrix to establish traceability**

- Tracks requirements by specific ID number
- Easy to see if it is testable

### 3. Effective Communication – Can it be validated or tested?

Requirement	Can be Validated or Tested
The system shall be password-protected	
The software shall be in C++	
The system shall be user-friendly	
The procedures shall be in plain English	
After data entry, the system shall complete transaction A in 0.3 seconds	
System XYZ, from which this system obtains registration data, provides the data in 0.5 seconds	



## 4. Quality Assurance: Conducting Effective Peer Reviews

**The Peer Review is the opportunity to Review the complete documentation prior to beginning the work on the product**

**Systematically take a detailed, 360° look to ensure:**

- Each risk has been addressed
- All ambiguities are resolved
- The best possible solution is identified
- The plan is complete

**Incorporate multiple viewpoints**

## 4. Quality Assurance - Conducting Effective Peer Reviews

**Immediate purpose of a peer review in a project is to find as many defects as possible, to avoid rework**

**Companies who adopt peer reviews can also use them to determine;**

- **Whether the reviews, as conducted, are cost-effective compared to other defect-finding methods**
- **How the review process can be improved**
- **Information about regular types of defects**
- **Company weaknesses implied by these defects**
- **Whether money should be spent to prevent these defects**

**All the methods of recording peer review information should be standard, for cross-project comparison**

# When Are You Done?

**When the client acceptor has enough decision support information to make an acceptable risk go/no-go decision**

**Some Business Requirements Documents may be hundreds of pages in length. Others may be only a bit larger than the template from which they are built**

**Work with the client acceptor on an ongoing basis to alleviate fear and create comfort around the decision**

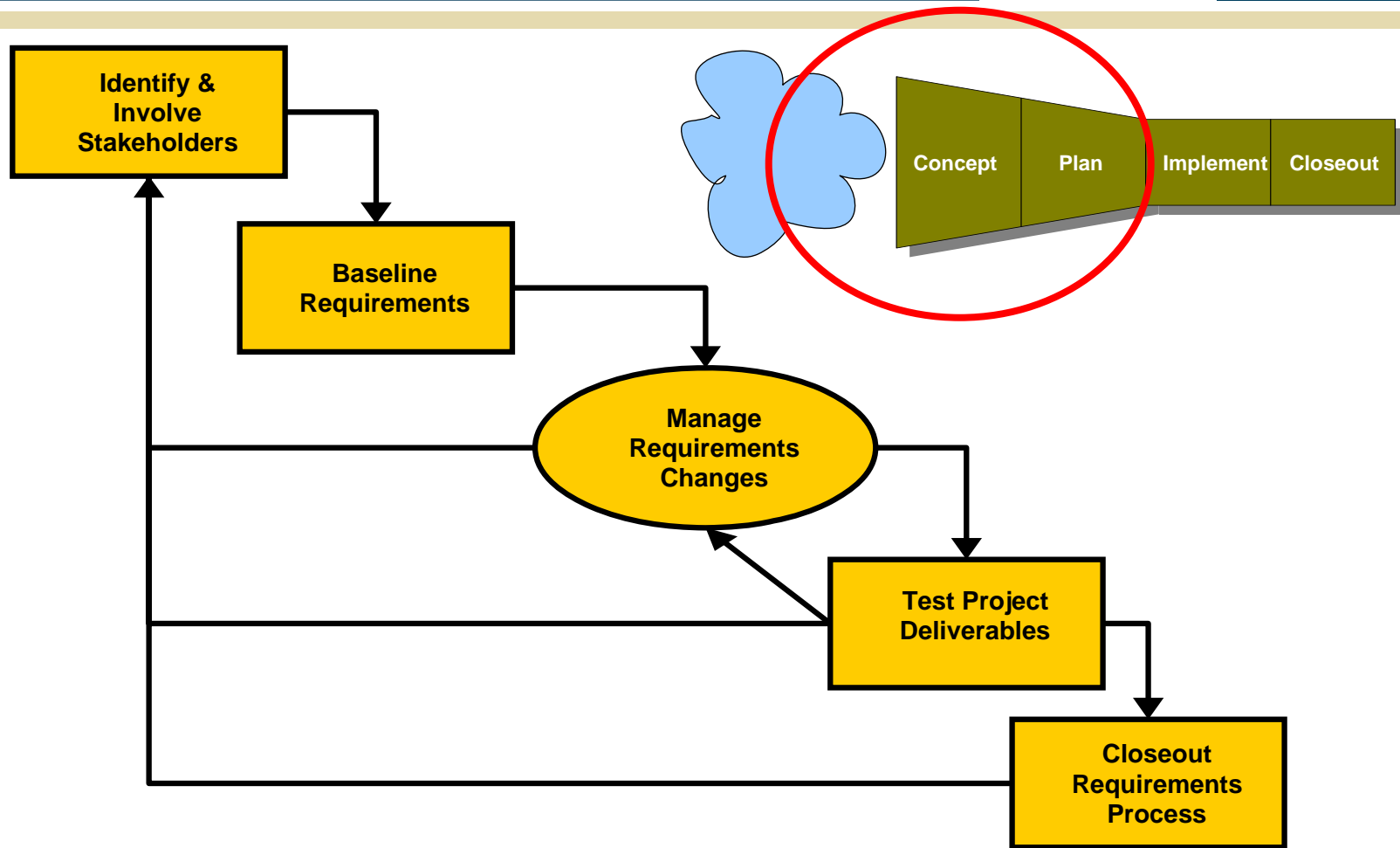
# “Must I Read This Before I Sign It?”

**Ultimately, you cannot force someone to read before signing**

**What you can do to encourage reading is—**

- **Ask questions to verify understanding**
- **Send documentation in small manageable packets that can be reviewed quickly, feedback can be provided, and approval granted**
- **Run bottom-up walkthroughs starting with detailed areas and ending with a high-level walkthrough**
- **Revisit risks associated with not capturing high quality requirements**

# ESI Requirements Management Model



# Managing Project Change (Fundamentally, Changes in REQUIREMENTS)

## Why?

- To protect all parties from unplanned, uncoordinated changes that may affect cost, schedule, or scope!

## How?

- Establish cost, schedule, and scope baselines
- Screen and assess the expected impact of change requests
- Track accepted and rejected changes
- Update the baseline as a result of accepted changes

**Use the Business Requirements Document to monitor and control accepted changes.**

# Verification and Validation (V&V)

## **Verification: are we building the product correctly?**

- Ensure that products of a particular phase meet objectives established in a previous phase

## **Validation: are we building the correct product?**

- Ensure that final system complies with stated requirements

**Both verification and validation must be ongoing throughout the Life Cycle—waiting until code is completed is too late!**

# An extra best practice: Investing in the Profession

## **Competency development**

- Comprehensive training curriculums
- PM and BA Universities

## **Community and culture**

- Competency Circles
- Methodology and process development and deployment

## **Recognition and career paths**

- Formal career paths including executive levels
- Bonus programs specific to Project Managers and Solutions Architects

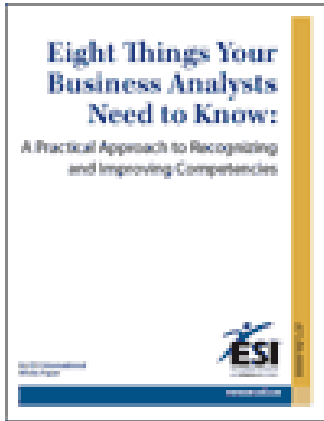
## **Knowledge sharing programs**



AT ALL COSTS...

# AVOID ASSUMPTIONS

# Free White Paper



## **Eight Things Your Business Analysts Need to Know** **A Practical Approach to Recognizing and Improving Competencies**

Explore the eight essential competencies for a successful business analyst:

- Eliciting Requirements
- Creating the BRD
- Structured Analysis
- Object-Oriented Analysis
- Testing
- End-User Support
- IT Fluency
- Business Process Re-Engineering

**Download it today at [www.esi-intl.com/BApaper](http://www.esi-intl.com/BApaper)**

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The ESI team  
appreciates your  
time today.

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